

The slope  $y'$  when  $y^2 = x$

We want to find the slope

$y'$  when (1)  $y^2 = x$

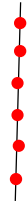
(2)  $x^2 + y^2 = R^2$

(3)  $y^2 + 2xy = 4$

$y^2 = 4x$

$2y y' = 4$

$y' = \frac{4}{2y} = \frac{2}{y}$



$y^2 = 2px$

$2y y' = 2p$

$y' = \frac{p}{y}$

$x^2 + y^2 = R^2$

$2x + 2y y' = 0 \quad /:2$

$x + y y' = 0$

$y' = \frac{-x}{y}$



$(x-a)^2 + (y-b)^2 = R^2$

$2(x-a) \cdot 1 + 2(y-b) y' = 0$

$(y-b) y' = -(x-a)$

$y' = -\frac{x-a}{y-b}$

$y^2 + 2xy = 4$

$2y y' + 2y + 2x y' = 0 \quad : 2$

$y y' + xy' = -y$

$y' (x+y) = -y$

slope  $y' = \frac{-y}{x+y}$